

## REMARKS

Claims 1-35 were previously cancelled. Claims 36 is amended. Claims 36-41 are pending. The amendment of the existing claims does not affect inventorship.

### **Claim Rejections – 35 USC § 112, second paragraph**

Claims 36-41 are rejected under 35 USC § 112, second paragraph as being unclear with respect to the generation of the "secondary" library in step d). Claim 36 has been amended to clarify the generation of the secondary library and how the secondary library is different than the primary library. Applicants believe that claim 36, as amended, is clear and meets the requirements of 35 U.S.C. § 112, second paragraph. Applicants respectfully request this rejection be withdrawn.

### **Claim Rejections – 35 USC §§ 102 and 103**

The rejection of Claims 36-41 are rejected under 35 USC §§ 102 and 103 as being anticipated and made obvious by Lacroix (US 2002/0072864), for reasons previously stated. Applicants respectfully submit that claim 36, as amended, is not anticipated or made obvious by Lacroix.

As amended, all pending claims require the generation of a secondary library by using several specific steps. The secondary library is not "simply a collection of amino acid residues." The secondary library is generated by combining an amino acid residue in the set of amino acid residues at each of the variable residue positions. The set of amino acid residues at each of the variable residue positions is generated by both selecting at least one variable amino acid at the variable position, and selecting the amino acid residue of the target protein for the variable position. Thus, the set of amino acid residues at each variable residue position includes the amino acid residue of the target protein and at least one variant amino acid residue. Lacroix does not teach or suggest creating a set of amino acid residues at a plurality of variable positions, nor does Lacroix teach or suggest combining the sets of amino acid residues at the variable positions to generate a secondary library.

When Lacroix refers to a "library," Lacroix means a plurality of rotamers to be substituted at a particular amino acid position. Lacroix is looking for a solution structure, not a library of structures. Lacroix does not suggest the generation of secondary libraries, merely the generation of a solution structure after applying an energy scoring function to a plurality of

rotamers at a particular amino acid position in the target protein. Thus, Lacroix teaches the generation of a list of variant proteins, and then the method can be run a second time to generate a different list of variant proteins. At best, this would be similar to two separate primary libraries. Lacroix never takes the output list of variant proteins from one protein structure as input for the generation of a second list of variant proteins.

Again, Lacroix does not teach or suggest the generation of a secondary library by combining a set of amino acid residues at each variant position in a primary library, as required in the pending claims. Since Lacroix does not teach or suggest every limitation found in the amended claims, Applicants respectfully submit that Lacroix cannot anticipate the amended claims. Additionally, no other reference of record teaches or suggests this missing limitation and thus do not make the pending claims obvious. Applicants respectfully request that the rejections under 35 U.S.C. §§ 102 and 103 be withdrawn.

The Applicants submit that in light of the above-amendment and argument, the claims are now in condition for allowance and an early notification of such is respectfully solicited.

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